REMARKS

Applicants appreciate the Examiner's thorough examination of the subject application and request reconsideration of the subject application based on the foregoing amendments and the following remarks.

Claims 1-58 are pending in the subject application.

Claims 1-58 stand rejected under 35 U.S.C. §102 and/ or 35 U.S.C. §103.

Claims 1, 9, 17, 24, 27, 33, 42-44, and 54 were amended to more distinctly claim Applicants' invention.

Claims 3, 6, 11, 14, 18, 29, 35 and 36 were amended for clarity. Specifically, the claims were amended to clarify that as a result of deactivation the scanning signal line driving section of the claims is rendered at least partially functionally deactivated or partially inoperative. For example, when deactivated the operation of the scanning line driving section could be deactivated based on the indicated signals so it is incapable of stopping the output of a pulse wavefrom. This was done to distinguish the case where a conventional driving section is maintained in its fully operational or functional condition, namely capable of performing all functions, irrespective of the fact that such functions are not being performed at a particular stage of the display process. It should not be construed, however, that such deactivation in the present invention corresponds to the scanning signal line driving section malfunctioning or that it will be malfunctioning.

Claims 4-8, 12-16, 18-20, 22-23, 25-26, 28-32, 38-41, 45, 51-52 and 53 were amended to reflect changes in the language of the base claim and any intervening claims as well as reflecting

any dependency changes resulting from claim cancellation, claim amendments or the addition claims.

Claim 21 was amended to more clearly claim the method steps of outputting display scanning signals having two different frequencies.

Claims 22, 23, 25, and 26 were amended so as to be in better form for a method claims as well as to more clearly claim the present invention.

Claim 37 was amended to more clearly claim the two clock signals being different from each other for use in outputting display scanning signals respectively for successive signal output and simultaneous display scanning signal output.

The amendments to the claims are supported by the originally filed disclosure.

35 U.S.C. §102 REJECTIONS

The Examiner rejected claims 33 and 43 under 35 U.S.C. §102(b) as being anticipated by Osamu [JP 2585463]. Applicants respectfully traverse as discussed below. Because claims were amended in the instant amendment, the following discussion refers to the language of the amended claims. However, only those amended features specifically relied upon to distinguish the claimed invention from the cited prior art shall be considered as being made to overcome the cited reference.

In view of the foregoing amendments to each of claims 33 and 43, Applicants believe that these claims are distinguishable from the cited art. Applicants also refer to the comments that follow in connection with the §103 rejection as to the disclosures and teachings of Osamu.

The distinctions over Osamu also are found where Osamu performs a process only in input vertical flyback periods and is incapable of displaying, for example, some of the 480 effective display areas of a video-signal (e.g., the top 40 areas). Further, Osamu does not consider suspending operation to decrease power consumption. Power consumption is proportional to the rate of the operating period and the non-operating periods. Therefore, even if the operation is suspended only in the flyback periods there would be no reduction in consumption when the flyback period is longer than the effective display period.

As provided in MPEP-2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Or stated another way, "The identical invention must be shown in as complete detail as is contained in the ... claims. *Richardson v Suziki Motor Co.*, 868 F.2d 1226, 9 USPQ 2d. 1913, 1920 (Fed. Cir. 1989). Although identify of terminology is not required, the elements must be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). It is clear from the foregoing remarks that the above identified claims are not anticipated by Osamu.

It is respectfully submitted that for the foregoing reasons, claims 33 and 43 are patentable over the cited reference and thus, satisfy the requirements of 35 U.S.C. §102(b). As such, these claims, including the claims dependent therefrom are allowable.

35 U.S.C. §103 REJECTIONS

The Examiner rejected claims 1-32, 34-42, and 44-58 under 35 U.S.C. §103 as being unpatentable over the cited prior art for the reasons provided on pages 3-7 of the above-referenced Office Action. The following addresses the specific rejections provided in the above-referenced Office Action. Because claims were amended in the instant amendment, the following discussion refers to the language of the amended claims, however, only those amended features specifically relied upon to distinguish the claimed invention from the cited prior art shall be considered as being made to overcome the cited reference.

CLAIMS 24-26 & 42

Claims 24-26 and 42 stand rejected under 35 U.S.C. §103 as being unpatentable over Osamu [JP 2585463] in view of Taku [JP 11-184434] for the reasons provided on pages 4-5 of the above-referenced Office Action.

The above-referenced Office Action asserts that Osamu discloses the methodology substantially as claimed except that Osamu does not disclose a step of deactivating operation of the scanning signal driving section until the next display is carried out. The Office Action further asserts that the teachings of Taku read on this step of the method of the present invention. Applicants respectfully traverse.

As indicated above each of these claims were amended so as to more clearly indicate that when the scanning signal line driving section is deactivated the scanning line driving section is in a condition where at least a portion thereof is functionally deactivated. In other words, the

section is not capable of fully carrying out all operational functions or at least a portion of the scanning line driving sections is not capable of performing all operational functions. For example, when deactivated the operation of the scanning line driving section could be deactivated based on the indicated signals so it is incapable of stopping the output of a pulse wavefrom.

The foregoing amendment was made to clarify or distinguish the present invention from that known in the art that discloses or teaches having the scanning line driving section or equivalent circuitry merely stop performing a function while the driving section retains the capability to fully perform the function. In other words, a conventional driving section is maintained in its fully operational or functional condition, namely capable of performing all functions, and consuming power irrespective of the fact that such functions are not being performed at a particular stage of the display process. It should not be construed, however, that such deactivation as that term is used in the present invention is intended to convey or correspond to the scanning signal line driving section malfunctioning or will be malfunctioning.

As previously indicated by Applicants, the subject application clearly indicates that the step of deactivating operation of the scanning signal line driving section until next display is carried out, is not intended to be descriptive or mean that the signal line driving section only stops sending or transmitting signals. Rather it is clear from the subject application that the deactivating operation is intended to mean or describe a condition whereby the scanning signal line driving section reduces its power consumption by terminating operation of functional

components that make up the scanning signal line driving section (e.g., see page 33, 2nd paragraph of the subject application).

The description referred to in Taku as describing the step of deactivation operation merely indicates that after applying a white signal voltage (OFF voltage) before making a transition to a particular state; certain actions are taken to stop application of the CLY and the output of the select voltage from the Y driver. This is not a description of a deactivation of operation of the driver but essentially describes switching the driver so it is not performing an output function. As indicated in the subject application, in conventional practice the circuit remains activated even though a signal is not being outputted. This standby condition consumes energy and thus it can hardly be said that Taku describes the deactivation of operation described and claimed by Applicants. Basically, Applicants describe a condition where logic elements or functionalities of the scanning signal line driving section are shutdown or turned off so as to reduce power consumption and to be incapable of providing output signals until the driving section is turned on when the next display is to be carried out.

As to Osamu, Applicants refer to the following remarks as well as those below regarding the rejection of claim 1 over the combination of Saito and Osamu. The distinctions over Osamu also are found where Osamu performs a process only in input vertical flyback periods and is incapable of displaying, for example, some of the 480 effective display areas of a video-signal (e.g., the top 40 areas). Further, Osamu does not consider suspending operation to decrease power consumption. Power consumption is proportional to the rate of the operating period and the non-operating periods. Therefore, even if the operation is suspended only in the flyback

periods there would be no reduction in consumption when the flyback period is longer than the effective display period.

It is respectfully submitted that the foregoing comments also apply to distinguish claims 25-26 and claim 42 from the cited combination of references.

It is respectfully submitted that claims 24-26 and 42 are patentable over the cited reference(s) for the foregoing reasons.

CLAIMS 1-23, 27-32, 34-41 & 44-58

Claims 1-23, 27-32, 34-41 and 44-58 stand rejected under 35 U.S.C. §103 as being unpatentable over Saito et al. (USP 6,232,939; "Saito") in view of Osamu [JP 2585463] for the reasons on pages 5-7 of the above-referenced Office Action. Applicants respectfully traverse.

Applicants claim, claim 1, a display device driving circuit which includes a scanning signal line driving section for outputting display scanning signals respectively to scanning signal lines for displaying an image according to the display data with respect to pixels which are disposed in a matrix. Such a display device driving circuit also includes a control section including a set section in which is set each of an image display area and one or more non-image areas, where each of the one or more non-image areas comprises a plurality or more of adjacent scanning signal lines. The control section also is configured and arranged so as to determine from inputs thereto, if the image data to be outputted corresponds to any of the one or more non-image areas and so as to output a transition instruction signal for each of the one or more non-image areas when it is so determined.

In addition, the scanning signal line driving section includes a control means for controlling scanning line signal outputs therefrom. Such a control means is configured and arranged so as to switch the output of the display scanning signals from the scanning line driving section to the respective scanning signal lines from successive output of display scanning signals to simultaneous output of display scanning signals based on a transition instruction signal from the control section. The control means also is configured and arranged to control the output of the display scanning signals from the scanning signal line driving section to the respective scanning signal lines based on the transition instruction signal, so that the display scanning signals are outputted simultaneously with respect to all of the plurality or more of scanning signal lines of the one or more non-image areas until next successive output is started by an instruction signal for successively outputting the display scanning signals.

As further taught in the subject application (e.g., see pages 22-23 thereof), the transition instruction signal is a mode signal that is used to make a transition from successive to simultaneous output with respect to the ON signals to the respective scanning signal lines and more specifically the output of the ON signals to the respective scanning signal electrodes in the non-display or non-image portions.

Although the Office Action bases the rejection on a combination of references, it also is asserted therein that the claim is so broad that Osamu could read on the claims alone. In this regard, Applicants would respectfully disagree with what is being characterized in the Office Action as being disclosed and taught in Osamu.

In the Office Action it is asserted that the SET signal in Osamu corresponds to the transition instruction signal of the claimed invention, and that the control section (201) in Osamu is a control section that outputs the transition instruction signal for each of the one or more non-image areas. It also is asserted that Osamu teaches switching from successive to simultaneous output so the display scanning signals are outputted to all the scanning lines corresponding to the one or more non-image areas. Applicants respectfully submit that the foregoing features of Osamu do ***not*** correspond to features of the claimed display device driving circuit.

The SET signal in Osamu does not correspond to the transition instruction signal. As set forth in the claim 1, and as more particularly described in the subject application, the transition instruction signal is outputted by the control section for each of the one or more non-image areas. It necessarily follows that if the SET signal in Osamu is causing a transition from successive to simultaneous output of the display scanning signals; then the SET signal cannot be outputted by the control section to the control means when the scanning signal line driving section is successively outputting display scanning signals. This clearly is NOT the case in the disclosure provided in Osamu.

In Osamu, and as more fully described in the partial translation submitted with Applicants Response to Final Office Action dated October 23, 2003, one of the terminals of the AND gate (207) is connected to the SET signal terminal (215) and the other terminal is connected to the output of a D flip-flop D2j (205) [j = 1, 2, ..., 480] that operates using the output of a D flip-flop D1j (203) as a clock. It also is described that the D flip-flop D1j (203) is connected to the output of the AND gate (207) for carrying out set-reset control for the D flip-flop D1j (203). It is further

provided in Osamu, that display operation is realized by applying a shift clock signal CK, a scanning start signal ST, as set signal SET, and a clear signal CLR as shown in Fig. 3 to the CK terminal (211), the ST signal terminal (213), the SET signal terminal (215), and the CLR signal terminal (217), respectively of the scanning electrode driving circuit (201).

Osamu further discloses that when the selection of the 400th electrode Yj(21) is finished, the 401st to 480th scanning electrodes Yj(21), namely the scanning electrodes in the non-display region(26) become settable by the set signal SET supplied from the SET signal terminal (215). Osamu further teaches, that a gate pulse GP is simultaneously outputted to all of the scanning electrodes. In this way Osamu teaches, the non-display signal (81) is applied at once to the scanning lines Pj of the non-display region within a retrace period Tb.

In sum, the SET signal is applied to the all of the D flip-flops D1j(203), not just those associated with the non-image or no-display region.

As to the assertion that the control section of the present invention corresponds to the feature identified by reference numeral 201 in Osamu, Applicants respectfully disagree. As indicated above, the display device driving circuit of claim 1 includes, *inter alia*, a scanning signal line driving circuit *and* a control section including a set section. It is clear from figure 1 in Osamu and the discussion relating to figures 1 and 3, that the element identified by reference numeral 201 is the scanning electrode driving circuit. It also is clear that the element(s) that provides the various input signals to the scanning electrode driving circuit 201 in Osamu is nowhere shown nor described. Thus, it can be hardly said that Osamu clearly discloses a control section including a set section as those terms are used in the claim 1 and the subject application.

As to Saito and as previously indicated by Applicants, Saito discloses a liquid crystal display apparatus having horizontal and vertical scanning circuits and scanning an array of pixels. Saito also discloses a liquid crystal display apparatus that outputs and latches an input signal at the rise and fall of the clock signal VCLK1. As also previously indicated by Applicants, in an overlapping time period of the output GS2 and output GS3, by supplying signals with the identical phase from the vertical scanning control terminals CNT1 and CNT2, it becomes possible to simultaneously drive outputs G2 and G3 from the vertical outputting circuit 32 (e.g., see col. 6, line 62 – col. 7, line 16, and col. 13 line 37 – col. 14, line 68 thereof). Thus, while the liquid crystal display apparatus of Saito may be able to simultaneously drive *adjacent* scanning lines (for example, scanning lines 2n-1 and 2n), neither of these adjacent scanning lines can be simultaneously driven with other scanning lines. For example, the scanning line 2n-1 cannot be driven simultaneously with the scanning line 2n+ 1.

As to the simultaneous driving of adjacent, it is clear from the discussion in Saito that this is required for dealing with the situation where the number of scanning lines for the input image signals is *smaller* than the number of scanning lines of the display device. Thus, what Saito teaches and discloses is that two scanning lines are driven simultaneously and image information on identical lines also is applied simultaneously as well. In other words, the circuitry in Saito is configured and arranged so that if the number of scanning lines associated with the image data being received is less than the actual number of scanning lines of the display device, then the circuitry in Saito operates so as to drive two adjacent scanning lines so that identical image

signals are written or outputted simultaneously to the two display lines associated with those scanning lines. See col. 14, lines 20-31 of Saito.

As with Osamu, there is no disclosure in Saito of the feature that provides the input signals to the driving circuit that control the functionality of the device.

Also, the Office Action asserts that the Saito teaches the use of transition instruction signal VLCK1 to cause a transition from successive to simultaneous output of scanning display signals. Applicants respectfully disagree with this characterization of Saito's disclosures.

The VLCK1 signal in Saito does not correspond to a transition instruction signal as that term is used in the present invention. As set forth in the claim 1, and as more particularly described in the subject application, the transition instruction signal is outputted by the control section for each of the one or more non-image areas. It necessarily follows that if the VLCK1 signal in Saito is causing a transition from successive to simultaneous output of the display scanning signals; then the VLCK1 signal cannot be outputted to the scanning line driving circuitry in Saito when the scanning signal line driving circuitry is successively outputting display scanning signals. This clearly is NOT the case in the disclosure provided in Saito.

As explained in Saito, VLCK denotes a vertical clock signal line and VLCK1 denotes a first vertical clock signal line. It is further described that the signal supplied to the signal line VLCK may be clock signal generated by an external clock source and having an amplitude identical with the power source voltage VDD for the elements of the circuit 30 and levels identical with those of a signal supplied thereto. See col. 7, lines 25-43 of Saito. Thus, the assertion that VLCK1 is a transition instruction signal is incorrect.

Also, the Office Action refers to figure 13 in Saito as illustrating such a transition instruction signal. Applicants would note that the timing signals appearing in figure 10 of Saito that depicts normal scanning operation correspond to the timing signals. While the signal in figure 13 is inverted from that shown in fig 10, it is clear that signal inversion is NOT used to indicate a transition from a normal or successive scanning to a simultaneous scanning operation. In this regard, Applicants would direct the Examiner's attention to figure 12 in Saito which also depicts the timing or clock signals for a simultaneous scanning operation, where there is no inversion of the clock signal. Thus, it is clear from the discussion in Saito that the signal inversion is more likely related to the form of the scanning scheme being performed (*e.g.*, scanning or driving of the (2n)Th and (2n+1)Th lines). Thus, the figures of Saito when viewed together contradict the assertion that the clock signals correspond to a transition instruction signal of the present invention.

The Federal Circuit has indicated in connection with 35 U.S.C. §102 that in deciding the issue of anticipation, the trier of fact must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify *corresponding elements* disclosed in the allegedly anticipating reference (emphasis added, citations in support omitted). *Lindemann Maschinenfabrik GMBM v. American Hoist and Derrick Company et al.*, 730 F. 2d 1452, 221 USPQ 481,485 (Fed. Cir. 1984). Notwithstanding that the instant rejection is under 35 U.S.C. §103, in the present case the Examiner has not shown that the identified elements or signals of the prior art corresponds, as that term is used above by the Federal Circuit, in any fashion to the transition instruction signal, nor the control section of the present invention as well other elements

and/ or signals as set forth in any of the independent claims of the present invention.

It also is clear that if the display device driving circuitry in Saito was modified based on the teachings Osamu, the resultant display device driving circuitry would be incapable of performing the display functions intended to be carried out by the display device driving circuitry in Saito. As provided by the Federal circuit, a 35 U.S.C. §103 rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in a reference, is not proper and the prima facie case of obviousness cannot be properly made. In short there would be no technological motivation for engaging in the modification or change. To the contrary, there would be a disincentive. *In re Gordon*, 733 F. 2d 900, 221 USPQ 1125 (Fed. Cir. 1984). In the present case it is clear that if the cited reference was modified in the manner suggested by the Examiner it would destroy the intent, purpose or function of the device as taught by the reference.

Notwithstanding the foregoing remark, in the interests of advancing prosecution, Applicants further amended claim 1 for clarity and so as to more distinctly claim the present invention. It is respectfully submitted that in view of these further amendments, the display device driving circuit of claim 1 is distinguishable from the identified combination of references.

It is respectfully submitted that the foregoing remarks regarding claim 1 also apply to distinguish each of the other independent claims 9, 17, 24, 27, 33, 42, 44 and 54 from the identified combination of references.

It also is respectfully submitted that the foregoing remarks regarding claim 1 also apply to at least distinguish each of dependent claims 2-8, 10-16, 18-23, 28-32, 34-39, 40-41 45-53 and 55-58 from the identified combination of references.

As to claim 3, this claim includes the further limitation that the driving circuitry further includes a deactivating means for deactivating operation of the scanning signal line driving section. It is admitted in the Office Action that Osamu does not disclose such a functionality and Applicants respectfully submit that the Office Action also has not disclosed nor taught such a functionality as well. In this regard, Applicants also refer to the foregoing comments above regarding the §103 rejection of claims 24-26 and 42. As such, at least for this additional reason claim 3 is considered allowable. It also is respectfully submitted that the foregoing further remarks distinguishing claim 3 also apply to distinguish each of claims 6, 11, 14, 18, 29, and 35-36 from the identified combination of references.

As to claim 21, this claim adds the further limitation that the frequency of the scanning display signals being outputted when successively outputting such signals is different from the frequency of the scanning display signals being outputted when simultaneously outputting such signals. The figures and disclosure in Osamu do NOT show nor suggest that the frequency of the SET signal in Osamu is dependent upon, or can be changed based, on the output mode of the scanning display signals. Moreover, such a modification or assertion would be directly opposite to the stated intents and purpose of the invention in Osamu. In fact the gate pulses shown in each of the figures of Osamu appear to have the same duration. Applicants also would note that there also is no such teaching provided anywhere in Saito in either the drawing figures or the specification.

As provided in MPEP 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some

teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F. 2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F. 2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As provided above, the references cited, alone or in combination, include no such teaching, suggestion or motivation.

Furthermore, and as provided in MPEP 2143.02, a prior art reference can be combined or modified to reject claims as obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 19866). Additionally, it also has been held that if the proposed modification or combination would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Further, and as provided in MPEP-2143, the teaching or suggestion to make the claimed combination and the reasonable suggestion of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). As can be seen from the forgoing discussion regarding the disclosures of the cited references, there is no reasonable expectation of success provided in the reference(s) and the suggested modification to Saito would irretrievable change the principal of operation of the driving circuitry and a display device embodying such driving circutiry.

As the Federal circuit has stated, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260,1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). Obviousness may not be established using hindsight or in view

of the teachings or suggestions of the inventor. *Para-Ordance Mfg. v. SGS Importers Int'l, Inc.*, 73 F.2d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995).

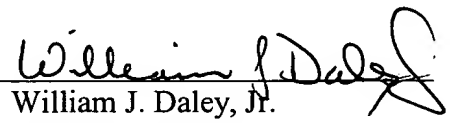
It is respectfully submitted that for the foregoing reasons, claims 1-23, 27-32, 34-41 and 44-58 are patentable over the cited reference(s) and satisfy the requirements of 35 U.S.C. §103. As such, these claims, including the claims dependent therefrom are allowable.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Applicants believe that additional fees are not required for consideration of the within Response. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,
Edwards & Angell, LLP

Date: September 2, 2004

By: 

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